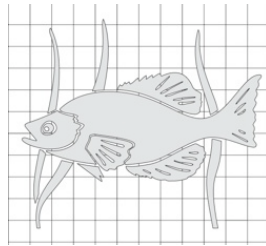Name

Date
April 10

Scale Diagrams:

A diagram that is an enlargement
or reduction of another diagram.

<u>Using old knowledge</u> - Reducing fractions

Reduce fractions by dividing a common factor from both the numerator and the denominator.

Examples:

a) $\dfrac{30}{50} = \dfrac{3}{5}$ b) $\dfrac{15}{45} = \dfrac{1}{3}$ c) $\dfrac{6}{8} = \dfrac{3}{4}$ d) $\dfrac{12}{14} = \dfrac{6}{7}$ e) $\dfrac{1.5}{4.5} = \dfrac{1}{3}$

Change fractions to decimals by dividing:

a) 0.6 b) $0.\overline{3}$ c) 0.75 d) 0.86 e) $0.\overline{3}$

The measurements in each diagram are compared.

Scale Factor = $\dfrac{\textit{Length of Scale Diagram}}{\textit{Length of Original Diagram}}$
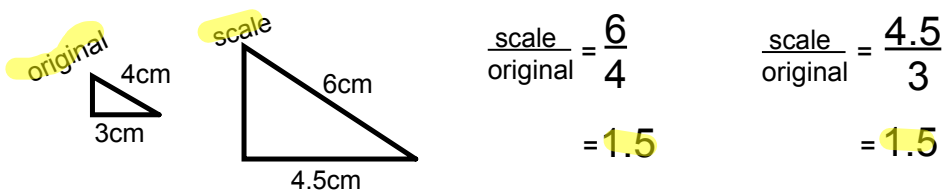
$\dfrac{10\ cm}{1\ cm}$

1cm

10 cm

The scale factor can be written as a fraction or decimal.

If the scale factor is less than one, the diagram is a reduction, larger than one indicates the diagram is an enlargement.

When pairs of corresponding lengths have the same scale factor, we say that the

corresponding lengths are proportional.

original

4cm

3cm

scale

6cm

4.5cm

$\dfrac{scale}{original} = \dfrac{6}{4}$

$= 1.5$

$\dfrac{scale}{original} = \dfrac{4.5}{3}$

$= 1.5$

When asked to calculate the size of a scale diagram multiply the original diagram by the scale fraction or decimal.
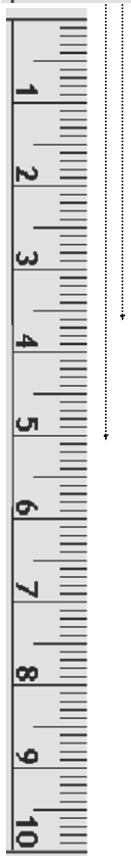
Determine the scale factor.

Scale Factor = *Scale Diagram*
Original Diagram

original

scale

$$\frac{3.5cm}{5cm}$$

$$\frac{7}{10}$$

$$0.7$$

This photo of longhouses has dimensions 9 cm by 6 cm.

 original

The photo is to be enlarged by a scale factor of $\frac{7}{2}$.
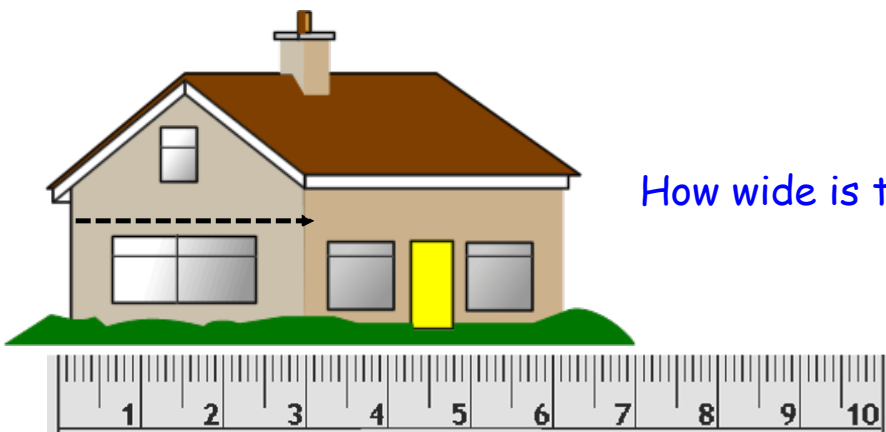
 scale

Calculate the dimensions of the enlargement.

Sometimes you are only given the scale diagram....
A scale may be given as a ratio.

The scale on this scale diagram of a house is 1:150.

This means that 1cm on the diagram represents 150 cm
or 1.5m on the house.

In other words... the scale factor is $\dfrac{1}{150}$

How wide is the actual house??

Page 323

#4, 6,8,12

Draw the scale diagram with scale of 2.

Homework

Page 329

Page 323

#4,5,6,11

4
#5
#6
#8
11(abc)